

HUMAN, SNAKE & INSECTS BITES/STINGS



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TERMINAL LEARNING OBJECTIVES



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ENABLING LEARNING OBJECTIVES



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SNAKE BITES



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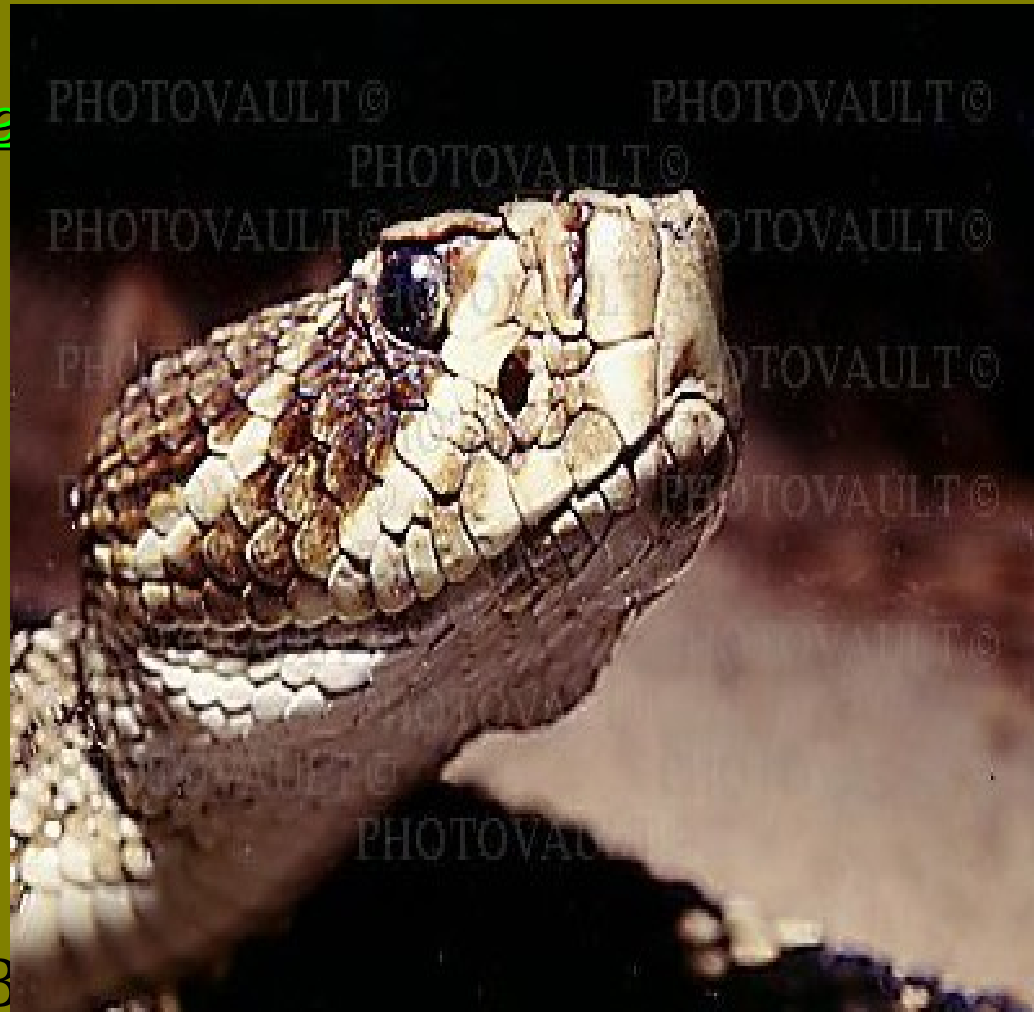
DEFINITION:

Envenomation Injuries - An injury incurred by a reptile, animal, or insect in which venom is the prime cause of illness.



Classifications of poisonous snakes

- Family: Viperidae
- Subfamily: Crotalidae
- AKA - PIT VIPERS
- More than 120 different species, all venomous (primarily hemotoxic)
- Location: Americas and most of Asia.

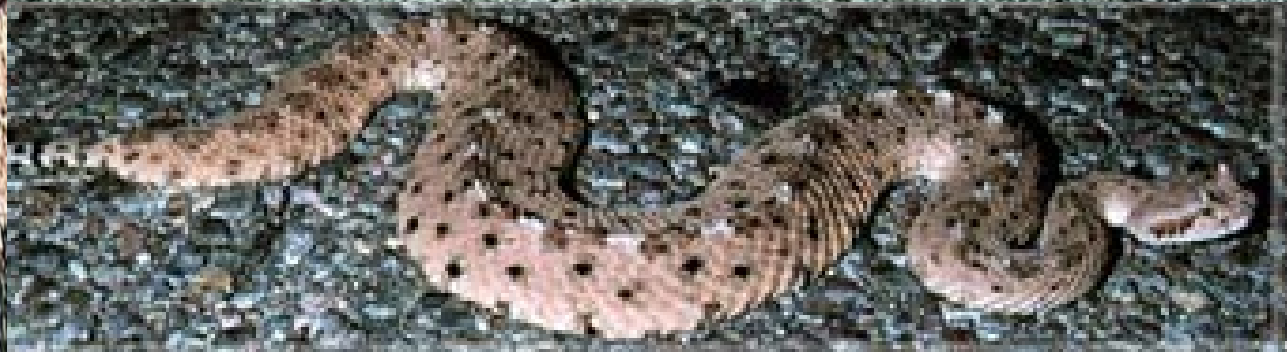




WESTERN DIAMONDBACK

RATTLESNAKE

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COPPERHEAD
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COTTONMOUTH (WATER

MOCCASIN)

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HABU
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HABU

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ELAPIDAE

- CORAL SNAKES
- KRAITS
- COBRAS
- MAMBAS
- ASPS

Venom is primarily neurotoxic, but may have localized effects.





CORAL SNAKE

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California Mt.
Kingsnake

Milksnake

POISONOUS OR NOT????



NOT!
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 **KING COBRA
COBRA**

SPITTING

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MAMBA



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HYDROPHIINAE



SEASNAKE

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Colubrid Snakes

- Colubridae is the largest family of snakes.
- Much disagreement exists by herpetologists concerning exact classifications within this family.
- There are ~50 species within Colubridae which are venomous, however, most of these snakes are harmless. The Backfanged Boomslang is the most important venomous member of this family.



Dipholidus typhus



BACKFANGED BOOMSLANG

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Classification of Snake Venom

- Two categories
 - Hemotoxic
 - Neurotoxin
- Most snake bites include varying amounts of both hemotoxins AND neurotoxins, and therefore have both local and systemic effects. Different families of snakes have predominately one or the other:
 - Viperidae: Mostly hemotoxic
 - Elapidae: Mostly neurotoxic



Hemotoxic

- Cause local tissue destruction via enzymes:
 - Thrombase
 - Hemorrhagin
- Symptoms are therefore usually localized (local pain, redness, swelling) but may also include nausea, vomiting, metallic taste, and peri-oral tingling.
- If the envenomation is large enough, and if not treated, hypotension, shock, and death may result.



Neurotoxin

- Neurotoxin venom may include;
 - Neurotoxin
 - Hemolysin
 - Cardiotoxin
- Neurotoxin venom WILL cause local effects (pain, redness, swelling), but these symptoms will usually not predominate.
- Neurotoxin envenomation injuries may also cause ptosis (upper eyelid drooping), dysphagia (difficulty swallowing), diplopia (double vision), and tachypnea (difficulty breathing).



DIAGNOSIS OF SNAKEBITE

- Fang marks
- Bleeding
- Manifestation of signs and symptoms of envenomation is necessary.



Signs and Symptoms of envenomation.

PIT VIPER

- 1/3 bites are dry
- 1/3 have mild symptoms
- 1/3 have severe and rapid symptoms
- Tissue swelling at the site
- Pain
- Fang marks
- Severe H/A and thirst
- Bleeding from major organs
- Bleeding into surrounding tissue



Signs/Symptoms of Snakebite

ELAPIDAE/COLUBRIDAE

- Symptoms are markedly slower than from a Pit Viper
- Circulation impairment
- Severe H/A
- Blurred vision
- Hearing difficulty
- Confusion
- Unconsciousness
- Muscular incoordination
- Respiratory difficulty leading to paralysis
- Nausea, vomiting, Diarrhea
- Chills, rapid onset of fever



Signs/Symptoms of Snakebite

HYDROPHIIDAE

- After 30 minutes - Muscle stiffness, aches
- Jaw spasms
- Moderate to severe pain in the affected limb
- Progressive CNS symptoms, blurred vision, drowsiness, and finally respiratory paralysis



NOTE:

- It has been a myth that sea snakes cannot bite very well, in fact they have the capability to bite a mans thigh and their fangs which measure from 2.5 to 4.5mm are long enough to bite through skin. Sea snakes can swallow prey twice the diameter of their neck. All though rare, bites do occur and without treatment death will occur in 12 to 24 hours.



Treatment of snakebites

- Keep victim calm
- Lay flat and avoid as much movement as possible
- Identify the bite site
- Remove any rings, bracelets, watches or any other constricting items from the extremity
- If a limb is bitten then splint in a neutral position (if possible) to prevent additional movement.
- Wrap the extremity rapidly with 3" - 6" ACE or CREPE bandage past the knee/elbow joint immobilizing it (Leave the fang marks open!)
- Help patient lie down in cool shaded area while waiting for MEDEVAC.



Treatment continued:

- Wrap no tighter than one would for a sprain
- Apply a proper splint
- Make sure pulses are present
- EVACUATE! (If tactical situation allows, if not, supportive care & ABC's)



NOTE:

If bitten by a snake,
whether it is
poisonous or not

**SEEK MEDICAL
TREATMENT!**



DON'TS

- DO NOT cut or incise the bite site
- DO NOT apply ice or heat
- DO NOT apply oral suction
- DO NOT remove any dressings/bandages
- DO NOT try to kill the snake for identification
- DO NOT have the victim eat or drink anything (small sips of water are ok)



Prevention of Snake Bites

- ***LEAVE THE SNAKE ALONE!!!!!!!!!!!!***

(This is the best prevention known to man!)

- Keep your hands and feet out of areas you can't see.
- Be cautious and alert when climbing rocks



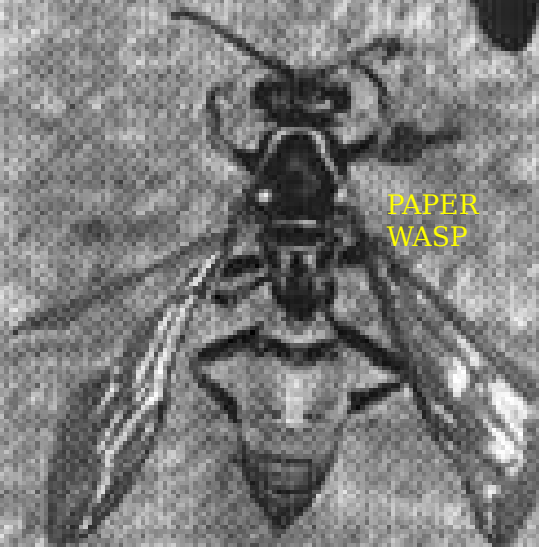
Insect bites and stings



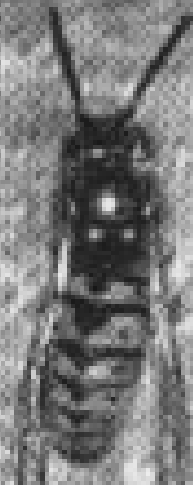
BUMBLE
BEE



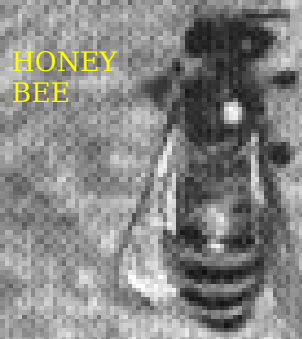
CARPENTER
BEE



PAPER
WASP



YELLOW JACKET



HONEY
BEE



AFRICANIZED
HONEY BEE



FIRE ANTS

Symptoms

- Stinging
- Burning
- Swelling
- Be aware for anaphylactic shock



Treatment

- **Remove any rings, bracelets, watches or any other constricting items**
- **Remove stinger**
- **Ice or equivalent over site**
- **For severe reactions - give Epinephrine 1:1000, .5cc SQ**
- **Evacuate all severe cases**



Centipedes. Millipedes, and Caterpillars

- Centipedes Bite
- Millipedes secrete
- Caterpillars shed





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Treatment

- **Remove any rings, bracelets, watches or any other constricting items**
- **Remove secretions/hairs**
- **Ice or equivalent over site**
- **For severe reactions - give Epinephrine 1:1000, .5cc SQ**
- **Evacuate all severe cases**



Spider bites and Scorpion stings



BLACK WIDOW



Symptoms

- Pain
- Muscle rigidity (Abdomen/Torso)
- Weakness
- Tremors
- Salivation
- Sweating
- N/V
- Anxiety
- Rash
- Anaphylaxis (Rare)
- Usually regress after a several hours and are gone in a few days



Treatment

- **Bite site may be hard to detect, if recently used the outside latrine be sure to check the buttocks and genitalia.**
- **Place ice over the bite site**
- **Be ready to treat anaphylaxis**



Brown House Spider
AKA
Brown Recluse or Violin
Spider



Signs and Symptoms

- **No pain initially**
- **Later a painful red area with cyanotic center**
- **Ulceration**





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- **Fever, chills, joint pain**
- **Splenomegaly**
- **Vomiting**
- **Systemic reactions can occur at any time while the ulcer is present**



Treatment

- **No antivenom available**
- **Supportive care as necessary**



Scorpions

- **Primitive arachnids**
- **Inhabit temperate climates**
- **More than 650 species spread across Americas, Africa, Middle East, India, etc.**





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Symptoms (may be varied)

- **Salivation and Lacrimation**
- **Vomiting and profuse sweating**
- **Relaxation of sphincters**
- **Gastric distention**
- **Bradycardia and hypotension, or
Tachycardia and hypertension.**



Diagnosis

- **Cardiac Arrhythmias**
- **Tachypnea and Pulmonary edema**
- **Numbness, Tingling, and Seizures**
- **Abdominal pain (late stage) due to pancreatitis.**



Treatment

- **Correct identification → get to a Hospital!**
- **Quantification of poisoning**
- **Comparison of the clinical picture with a graded scale for therapy**
- **Oral analgesics**
- **Supportive care as necessary**



Prevention

- **LEAVE THE SCORPIONS ALONE!**
- One should always wear shoes while walking in the dark
- When in the field, clothes, sleeping bags and boots should be shaken out prior to use



Questions & Review



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